

BETTER DEGREE OF APPROXIMATION BY MODIFIED BERNSTEIN-DURRMEYER TYPE OPERATORS

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1. ABSTRACT

In the present article we investigate a Durrmeyer variant of the generalized Bernstein-operators based on a function $\tau(x)$, where τ is infinitely differentiable function on $[0, 1]$, $\tau(0) = 0$, $\tau(1) = 1$ and $\tau'(x) > 0$, $\forall x \in [0, 1]$. We study the degree of approximation by means of the modulus of continuity and the Ditzian-Totik modulus of smoothness. A Voronovskaja type asymptotic theorem and the approximation of functions with derivatives of bounded variation are also studied. By means of a numerical example, finally we illustrate the convergence of these operators to contain functions through graphs and show a careful choice of the function $\tau(x)$ leads to a better approximation than the generalized Bernstein-Durrmeyer type operators considered by Kajla and Acar [1].

REFERENCES

- [1] Kajla A., Acar T., Blending type approximation by generalized Bernstein-Durrmeyer type operators, Miskolc Math. Notes, 19(1) (2018), 319 – 336.